



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,343	08/18/2003	Josef Giessler	47279-0015	1920

55694 7590 12/20/2006
DRINKER BIDDLE & REATH (DC)
1500 K STREET, N.W.
SUITE 1100
WASHINGTON, DC 20005-1209

EXAMINER

ADDISU, SARA

ART UNIT	PAPER NUMBER
----------	--------------

3722

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/20/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/642,343

Applicant(s)

GISSLER ET AL.

Examiner

Sara Addisu

Art Unit

3722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **9/20/06** has been entered.

Claims 8-10 have been cancelled. Currently, claims 1-7 are pending in this application.

Claim Objections

1. Claim 1 is objected to because of the following informalities:

- Claim 1, line 4 recites, "an outer periphery of the cutting part therein cutting grooves....". Examiner suggests adding the word "having" after the word "therein" such that it reads "an outer periphery of the cutting part therein having cutting grooves....".
- . Appropriate correction is required.

Claim Rejections - 35 USC § 103

Art Unit: 3722

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

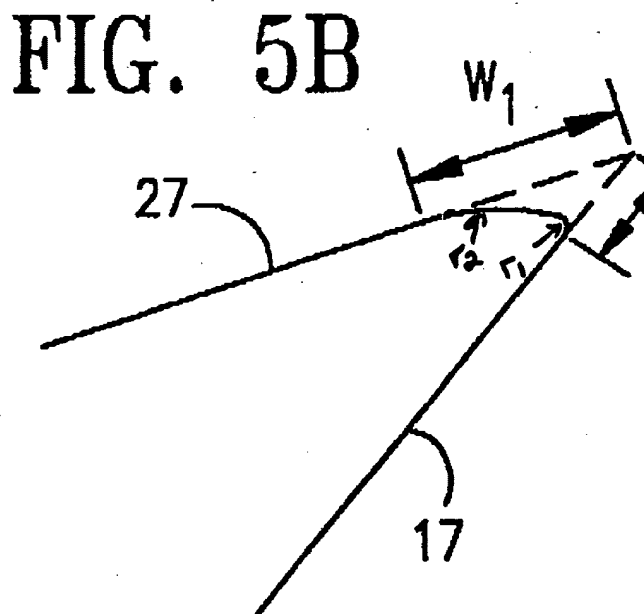
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, are rejected under 35 U.S.C. 103(a) as being unpatentable over Britzke et al. (USP 5,609,447), in view of Sato et al. (US Pub No. 2002/0031409) and further in view of Kondo et al. (JP 2000015512).

Britzke et al. teaches an end mill (10) which would obviously have a comprising a shank (11) and a cutting part (13) disposed at the front end of the shank and defining an axis of rotation (16) and an outer periphery of the cutting part (13) having cutting grooves (15) extending helically to the front end face of the cutting part and each cutting groove disposed rearwardly of the end face defining a helix angle with a plane containing the axis while having cutting edges formed at the edge ('447, Figure 1 and Col. 3, lines 26-38). Regarding claim 1, BRITZKE ET AL. teaches the invention could be used on other tools such as milling cutters therefore, broadly reading the claim, it reads on "a shank end mill" ('447, Col. 5, lines 53-59). BRITZKE ET AL. also teaches in figures 5, the helix angle being larger than a cutting-face angle formed between the end face and a front end section of each cutting groove, the cutting-face angle continuously transforming into the helix angle. BRITZKE ET AL. also teaches in figures 5 the cutting-face angle transforming (via a transition) into the helix angle along a constant radius of

Art Unit: 3722

curvature (figure 5A) as well as the cutting-face angle transforming into the helix angle along a plurality of radii (figure 5B) whereby a first radius adjoins the cutting edge, and a second radius adjoins the helix angle (the first radius being smaller than the second radius: see figure below). Regarding claims 5 and 6, BRITZKE ET AL. teaches in Figure 5B, the transition between the cutting-face angle and the helix angle extending substantially parallel to the axis for a distance shorter than a diameter of the tool as well as shorter than half the diameter of the tool (all see figure 4 for the diameter of the tool).



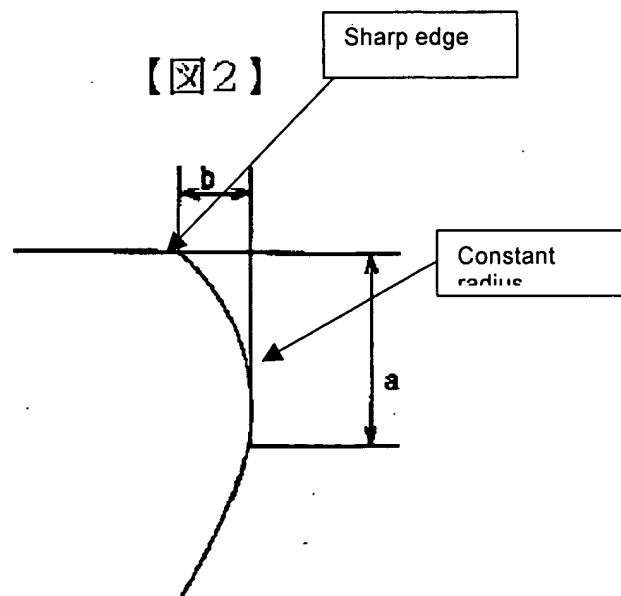
However, BRITZKE ET AL. fails to teach the milling cutter being an end mill having main cutting edges extending along an edge of the cutting grooves as well as being arranged substantially in a common plane. BRITZKE ET AL. also fails to teach

Art Unit: 3722

the transition from the end face to the front end section of each cutting groove forming a sharp cutting edge.

Sato et al. teaches an end mill having a shank (12) and a cutting part having cutting edges extending along an edge of the cutting grooves and being arranged substantially in a common plane ('409, figure 1 and page 1, paragraph 2).

Kondo et al. teaches a tool having a sharp cutting edge at the transition and a cutting face angle continuously transforming into a helix angle along a constant radius ('512, figure 2 and figure below). Kondo et al. also teaches in figure 2, performing round-head honing (i.e. reinforcement of the cutting edge) at a location that is shifted further where it is not the at the point of the cutting edge (consequently, the transformation part remains sharp) ('512, translation, Page 2, lines 1-3 and paragraph 7).



Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include cutting edges that extending along an edge of the cutting grooves (and arranged substantially in a common plane) of BRITZKE ET AL's invention, as taught by Sato et al., for the purpose of using the tool in slot or shoulder milling operations ('490, page 1, paragraph 2, lines 6-7) since BRITZKE ET AL. teaches the invention can be used on other tools such as milling cutters ('447, Col. 5, lines 53-59). It would have also been obvious to one of ordinary skill in the art at the time of the invention was made to modify BRITZKE ET AL's invention such that it has a sharp cutting edge at the transition from the front end section, as taught by Kondo et al., for the purpose of reducing the chipping/breaking of the cutting edge ('512, abstract).

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Britzke et al. (USP 5,609,447), in view of Sato et al. (US Pub No. 2002/0031409) and further in view of Kondo et al. (JP 2000015512) and Meece et al. (USP 6,585,460).

The modified device of BRITZKE ET AL. teaches a rotary cutting tool (10) comprising a shank (11) and a cutting part (13) and an outer periphery of the cutting part (13) having cutting grooves (15) extending helically to the front end face of the cutting part, as set forth in the above rejection.

However, the modified device of BRITZKE ET AL. fails to teach the end face and the outer periphery being joined by a chamfer.

MEECE ET AL. teaches a drill having an outer periphery (18) being jointed to the end face via chamfer (90) having axial extension shorter than its axial extension of the transition from the cutting face angle to the helix angle ('460, figures 1 and 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify BRITZKE ET AL.'s invention such that the outer periphery and the end face are joined via chamfer, as taught by MEECE ET AL. for the purpose of providing a cutting land ('460, Col. 3, line 61 to Col. 4, line 5).

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3722

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu
(571) 272-6082

SA
10/10/06

Monica S. Carter
MONICA CARTER
SUPERVISORY PATENT EXAMINER